## Abstract

A method for generating and maintaining a pruned broadcast tree for a network of switches operating multiple simultaneously active paths between devices with a load balancing family of protocols. The pruned broadcast tree is preferably generated as a by-product of cost propagation aspects of the load balancing protocols exchanged among cooperating network switches. The load balance protocols operable within the network switches in association with the present invention permit multiple simultaneously active paths to be utilized among the network devices. The pruned broadcast tree is therefore used to reduce the latency of broadcast messages propagated within the network switches to reach all devices in the network. The broadcast tree defines a minimized set of devices to which a broadcast message need be forward to assure transmission to all network devices. The pruned broadcast tree, once established, is updated only in response to failure of a link and recovery of a failed link. A separate protocol of the present invention enables such pruned broadcast tree modifications and restoration.